HUMAN FACTORS IMPLEMENTATION TEAM (HFIT) VERIFICATION/CERTIFICATION

INTRODUCTION

Form 881 provides the instructions for the approval of payload Human Factors requirements in order to comply with Space Station Program (SSP) 57000 Section 3.12 specifications. The development of this set of instructions is to provide assistance to the Payload Developer (PD) with the verification of Human Factors requirements listed in Form 881 and SSP 57000 Section 3.12. The HFIT will be a joint effort requiring an Astronaut Crew Representative, NASA Human Factors and Boeing Human Factors experts.

RESPONSIBILITIES

The Payload Developer is responsible for complying with all requirements listed in SSP 57000 Section 3.12. The HFIT will certify payload compliance by means of PD drawings, photos, measurements and/or any other required information needed to complete evaluation of program Human Factors requirements. The PD will coordinate with the HFIT before submitting data for approval. The HFIT is responsible for reviewing all data for payload human factors criteria for the SSP 57000 3.12 requirements listed in Form 881. Granting approval is based on the instructions herein. The HFIT is also responsible for performing the on site human engineering verification of the hardware and ensuring that the hardware is usable from a human engineering perspective, including commonality, standardization, and operations.

Upon receiving Form 881 from the HFIT, the PD and the HFIT will assess/verify through vendor or on site inspection, the hardware indicated on Form 881. This data will be collected by the HFIT with the help of the PD. The PD will aid the HFIT by providing any data collected as a result of design or hardware modeling.

The Payload Control Board (PCB) is responsible for resolving issues and disagreements between the PD and the HFIT.

HFIT APPROVAL INSTRUCTIONS

The HFIT will use the following instructions in reviewing and providing the approval of payload Human Factors requirements on Form 881. Verification data can be obtained and presented in the forms listed on Form 881 by the HFIT and/or the PD. Space Station Program (SSP) 57000, NASA–STD–3000, MIL-STD-1472F, SAE standards, Human Factors Design Guide and in-house measurements will be used to evaluate the hardware for acceptance.

Step 1 (A) The HFIT will submit Form 881 (with the help of the PD) for approval. The acknowledgement of these requirements and contact with the HFIT representative is the

first step. This should occur at the time a Payload Integration Manager (PIM) is assigned or Payload is manifested.

Step 1 (B) Signed concurrence on Form 881 by the PD point of contact and the HFIT may occur at a time negotiated by the PIM and the HFIT. If contact is not made, or concurrence is not obtained, the PD will use the existing SSP 57000 process flow for exceptions. Contact by the PD will generate a file by the HFIT and begin the Form 881 and 883 processes.

Step 2 Requirements and Applicability Review. This happens at the PDR, CDR, or at a time negotiated by the PIM and the HFIT. This is a formal review conducted by the HFIT and the PD to ensure either the HFIT review or the formal SSP 57000 exceptions process is resolving requirements issues. All tools and procedures will be used with PD concurrence to obtain data for Form 881 as negotiated with HFIT.

Step 3 is the Preliminary Hardware Evaluation Report (Form 881). During this process a form 882 ISS Payload Human Factors Requirements Compliance Feedback Form can be used to note hardware discrepancies either by the HFIT or the PD. This happens from ICD approval time until L-10. This step will complete any SSP 57000 Section 3.12 Human Factors issues and allow the PD to close out the HFIT process. The data collected by the PD and the HFIT will complete the HFIT requirements process.

Step 4 is Final Hardware Evaluation. A signed Form 881 completes this. A review is conducted by the HFIT no later than L-10. The HFIT will only give a Form 883 payload compliance with SSP 57000 section 3.12 requirements when all hardware issues are resolved with the exception of sections 3.12.3.2 Touch Temperature, 3.12.3.3 Acoustic Requirements, 3.12.3.3.1 Noise Limits and 3.12.7 Identification Labeling. These requirements will be completed through the formal process described in SSP 57000. The HFIT, in Form 883, lists all SSP 57000 Section 3.12 requirements that cannot be met. Approval of the waived condition is acknowledged and stamped by the HFIT on Form 883. Once all requirements listed in Form 881 are met, a Form 883 compliance form will be issued for the COFR. Boeing PEI Human Factors will track all non-compliances.

MEMBERS AND FUNCTION

1) **Astronaut Crew Representative:** This is any member of the Astronaut Crew who has signature status granted by all members of the HFIT.

2) **NASA Human Factors Representative:** This is any member of the NASA Human Factors Group who has signature status granted by all members of the HFIT.

3) **Boeing Human Factors Representative:** This is any member of the Boeing Human Factors Group who has signature status granted by all members of the HFIT.

4) **OZ 3/ Boeing Management Representative:** This is a Boeing PEI Management Representative who has signature status granted by all members of the HFIT.

SIGNATURES

All members listed below have agreed upon the Human Factors Implementation Team (HFIT) process charter and Form 881 and its processing language. A completed copy of Form 881 will be filed with all parties listed in the Members signature blocks of this form for the duration of the payload's use on the International Space Station (ISS). A Form 883 will be issued upon a completed Form 881 as the payload's Certificate of Compliance.

Members:

1) Astronaut Crew Representative _____

2) Payload Developer Point of Contact _____

3) HFIT Representative _____

4) OZ 3/ Boeing Management Representative _____

Requirements and Applicability Review:

Date _____

Payload _____

PD POC _____

HFIT Representative _____